

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-36				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016			Title of Work Assignment/SF Site Name				
			Base Option Period Number 3			Dental Amalgam ELG Support				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW PWS Section 3					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval					Period of Performance From 09/26/2015 To 09/25/2016					
Comments: Work shall not commence on this Work Assignment until September 26, 2015.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO (Max 2) <input type="checkbox"/>										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:			LOE:					
09/26/2012 To 09/25/2016										
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee:			LOE:			
Cumulative Approved:				Cost/Fee:			LOE:			
Work Assignment Manager Name Damon Highsmith							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number 202-566-2504			
							FAX Number:			
Project Officer Name Meghan Hessenauer							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number: 202-566-1040			
							FAX Number:			
Other Agency Official Name							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number:			
							FAX Number:			
Contracting Official Name Brad Heath							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number: 513-487-2352			
							FAX Number:			

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 3-36**

Title: Dental Amalgam Effluent Guidelines Regulatory Support

Work Assignment Contracting

Officer's Representative (WACOR): Damon Highsmith

Alternate Work Assignment Contracting

Officer's Representative (Alternate WACOR): Paul Shriner

Period of Performance (POP): September 26, 2015 through September 25, 2016

New Contracting Terminology From Environmental Protection Agency Acquisition Guide (EPAAG) Subsection 1.6.5
Contract-Level Contracting Officer's Representative (CL-COR) = Project Officer (PO)
Alternate Contract-Level Contracting Officer's Representative (Alternate CL-COR) = Alternate Project Officer (APO)
Work Assignment Contracting Officer's Representative (WACOR) = Work Assignment Manager (WACOR)
Alternate Work Assignment Contracting Officer's Representative (Alternate WACOR) = Alternate Work Assignment Manager (AWACOR)

Background:

In October, 2014, EPA proposed pretreatment standards for dental facilities to reduce discharges of mercury to the environment. The agency focused its technology assessment on amalgam separators. OMB concluded review of the proposed rule in August, 2014. EPA currently expects to publish the final rule in June 2016.

Across the United States, many states and municipal wastewater treatment plants (publicly owned treatment works (POTWs)) are working toward the goal of reducing discharges of mercury to POTWs.

Mercury is a concern to human health because it is a persistent bioaccumulative toxic element. Many studies have been conducted in an attempt to identify the sources of mercury entering these POTWs. According to the 2002 Mercury Source Control and Pollution Prevention Program Final Report prepared for the National Association of Clean Water Agencies (NACWA), dental clinics are the main source of mercury discharges to POTWs. A study funded by the American Dental Association (ADA) estimated in 2003 that 50 percent of mercury entering POTWs was contributed by dental offices. EPA estimates that dentists discharge approximately 4.4 tons of mercury each year to POTWs. EPA estimates there are approximately 160,000 dentists working in over

120,000 dental offices that use or remove amalgam in the United States – almost all of whom discharge their wastewater exclusively to POTWs.

Mercury-containing amalgam wastes may find their way into the environment when new fillings are placed or old mercury-containing fillings are drilled out and waste amalgam materials that are flushed into chair-side drains enter the wastewater stream. Some of the waste amalgam particles that reach the sewer system settle out in the sewers, and some are carried to POTWs. The physical processes used in POTWs remove about 90% of the mercury received in wastewater. The mercury removed from wastewater then resides in the biosolids or sewage sludge generated during primary and secondary treatment processes.

EPA conducted a study of this industry as part of its 2006 Effluent Guidelines Plan. The Health Services Industry Detailed Study Report for Dental Amalgam (EPA-821-R-08-014) was completed in August 2008 (see http://water.epa.gov/lawsregs/lawsguidance/cwa/304m/upload/2008_09_08_guide_304m_2008_hsi-dental-200809.pdf.) Among other things, the 2008 study provided a profile of the industry, information on types and effectiveness of amalgam separators available, information on mercury discharges from dental facilities and, information on existing state and local amalgam separator requirements.

Under work assignment 1-36 and 2-36, the contractor reviewed the Technical and Economic Development Document for consistency with the underlying analyses and for consistency with the preamble and regulatory language of the proposed rule, finalized outstanding items related to publishing the proposed rule (TEDD review), and parsed comments from the public,. For this work assignment, the contractor will be tasked with: assisting with comment response, conducting new analyses based on comments and data received from the public, and providing general technical support in response to inquiries from EPA management.

The contractor shall provide technical support and expertise for a variety of regulatory development activities. Support may include, but is not limited to, estimating pollutant discharges, analyzing the performance of amalgam separators, preparing briefings and outreach materials, and conducting other similar technical analyses that fall within the contract Statement of Work.

Throughout this Work Assignment, the contractor shall provide draft and final reports to EPA in electronic and hard copy formats. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation.

Travel - EPA anticipates the need for non-local travel by the contractor employees and/or subcontractors to support the scope of this work assignment. Travel may be to conferences, or to meetings. EPA anticipates the need for 1-3 trips as a part of this work assignment.

Confidential Business Information - The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in the Office of Science and Technology Confidential Business Information (OST-CBI) Application Security Plan (August, 2011), or its successor approved plans. See Task 4 for more details.

Meetings - To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties or visiting field sites.

Limitation of Contractor Activities - The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the Contracting Officer (CO), Contract-Level COR (CL-COR) and WACOR.

Task 1 – Program Management:

The contractor shall develop a work plan describing the necessary steps and estimated hours to complete each of the tasks included in this work assignment. The work plan shall also include a list of the key personnel to participate in the work assignment. The contractor shall also estimate direct costs such as travel, computer cost, typing, etc.

The contractor shall prepare and deliver monthly progress reports to the CO, CL-COR and WACOR. These reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The contractor shall inform the CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

TASK 1 – DELIVERABLES	Due Date
Work Plan	• In accordance with contract requirements
Progress Reports	• Monthly

Task 2 – Records Management (PWS Section 3.6):

The contractor shall assemble and maintain a record of all documents relevant to the rulemaking proceedings. The contractor shall contact the Office of Water Docket to ensure that the record shall meet the docket's requirements including any E-Docket requirements. This includes preparation of electronic versions of documents for the Agency's E-Docket system. The index of rulemaking record materials shall be submitted to the WACOR quarterly. The record documents and index are to be delivered to the WACOR at the completion of the work assignment, or when directed by the WACOR in writing. Finally, the contractor shall provide supporting information for briefings and support on FOIAs (i.e. locating and supplying the WACOR with relevant information

from the record to be used in the Agency's response to the FOIA) as directed in writing by the WACOR.

TASK 2 - DELIVERABLES	Due Date
Maintain both the paper and the electronic the records	• Ongoing throughout the period of performance
Submit index of record materials to WACOR	• Quarterly
Submit record index	• September 25, 2016 or upon written technical direction from the WACOR
Briefing / FOIA Support	• Ongoing throughout the period of performance by written technical direction.

Task 3 – CBI Procedures (PWS Section 3):

During the course of the work assignment, the contractor may be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract statement of work, Section 3. The contractor shall obtain CBI security clearance to use CBI information (Refer to Section H of the schedule for security requirements). The contractor shall utilize CBI information in accordance with contract requirements and limitations to include using the Office of Science and Technology Confidential Business Information (OST-CBI) Application Security Plan (August, 2011) or its successor approved plans.

Task 4 – General Technical Support (PWS Section 3):

Using information provided by the WACOR, along with information gathered or developed by the contractor, the contractor shall assemble information and perform analyses as directed by the WACOR through written technical direction. The tasks may include work such as support in preparing or gathering data for presentations at conferences, summarizing data to brief management, or preparing materials and participating in meetings, conferences and workshops to support EPA's outreach activities to the public and industry. These materials may include reports, brochures, leaflets, posters, or other presentation materials. For purposes of preparing a work plan, the contractor shall assume there shall be approximately three written technical directives.

TASK 4 – DELIVERABLE	Due Date
General technical support (as above)	• by written technical direction

Task 5 - Regulatory Support (PWS Section 3.5, 3.6)

Upon written technical, the contractor shall assist EPA in developing and reanalyzing regulatory options and its implementation, based on comments on the proposed regulation provided during the comment period. Technical support under this task shall include preparing text for use in Federal Register preambles, providing technical assistance in developing revisions to the regulations, and assisting in the development of

notices of data availability. Tasks may also include providing supporting information and documentation for regulatory option packages, briefings, and selected analyses and data summaries. Deliverables under this task may include quick-response tasks.

TASK 5 – DELIVERABLES	Due Date
Draft text for inclusion in Federal Register preambles and notices of data availability; draft regulatory text	<ul style="list-style-type: none"> • by written technical direction
Analysis of regulatory options	<ul style="list-style-type: none"> • by written technical direction

Task 6 – Response to Public Comments (PWS Section 3.5, 3.6, 4.0)

The contractor shall continue to provide technical support to EPA's efforts to respond to public comments received on the proposed rule. This support may include, but is not limited to, the following activities: compiling information that will be used to develop responses to comments; and drafting responses. Responses may consist of individual comment responses, or they may be in the form of essays that address major issues or frequently stated comments. The contractor shall provide monthly reports regarding the status of comment response activities, including summary statistics for the number of comments for which responses have been drafted (or not drafted) and the review/approval status of the responses.

TASK 6 – DELIVERABLES	Due Date
Draft response to public comments received for proposed rule	<ul style="list-style-type: none"> • By written technical direction
Monthly report of status of comment response activities	<ul style="list-style-type: none"> • Monthly

Task 7 -- Technical and Economic Development Document (PWS Section 3.6):

The contractor shall build upon the draft Technical Development Document, developed for the proposed rule under wAs 1-36 and 2-36 of this contract, for this industry. The contractor shall use information collected from public comments on the proposal in developing the document. The contractor also shall incorporate information from the economic assessment and environmental assessments, both of which shall be provided to the contractor.

TASK 7 – DELIVERABLES	Due Date
Draft TEDD for final	<ul style="list-style-type: none"> • by written technical direction
Final TEDD for final	<ul style="list-style-type: none"> • by written technical direction

Task 7– Quality Assurance (PWS Section 3.1):

Quality Assurance Project Plans are required under the Agency’s Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1A2 and implementing guidance CIO-2105-P-01-0. All projects that involve the generation, collection, analysis and use of environmental data shall have an approved QAPP prior to the commencement of the work.

QA Project Plan Requirements

EPA policy requires that an *approved* Quality Assurance Project Plan (QAPP) be in place before any work begins that involves the collection, generation, evaluation, analysis or use of environmental data. This work assignment is a continuation of work previously performed by the contractor under WA 8-36 of contract 68-C-02-095 and WAs 1-36 and 2-36 of this contract, and a QAPP was already prepared and approved by EPA to support work performed to support this project.

This continuation work assignment includes work to support the Steps 13, 14, 15, 16 and 17 that were not included in the effluent guidelines development process that were not included in the precursor to this Work Assignment. To ensure that all activities performed under this work assignment are compliant with EPA’s quality system requirements, the Contractor shall adhere to the previously approved QAPP.

Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis that the information is capable of being substantially reproduced. To support compliance with these data transparency/data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket or record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA’s *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as “EPA’s Information Quality Guidelines,” describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA’s Information Quality Guidelines indicate that “especially rigorous robustness checks” shall be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractors shall indicate which results were obtained using the tools (SOPs, checklists, and guidelines) that the

Contractor designates as confidential so that the WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the WACOR, the Contractors may be requested to prepare pre-dissemination review checklist as described in Section 5.5 of the Office of Water Quality Management Plan, February 2009. If this is required, the WACOR shall notify the Contractor through written technical direction.

Additional QA Documentation Required

In addition to the QAPP requirements described above, all major deliverables (e.g., Technical Support Documents, Study Reports, Study Plans, etc.) produced by the Contractor under this work assignments shall include a discussion of the QA/QC activities that were or shall be performed to support the deliverable. For example, a Technical Support Document or Study Report shall include a clear discussion of the quality management strategies that were employed to control and document the quality of data generated and used.

The contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the contractor may include this as a part of the contract-required monthly financial/technical progress report.

Deliverables and schedule for Task 7:

TASK 7 – DELIVERABLES	Due Date
Monthly reports of QA work performed (may be included in the Contractor’s monthly progress report.)	• Monthly

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-36				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016 Base Option Period Number 3			Title of Work Assignment/SF Site Name Dental Amalgam ELG Support				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 09/26/2015 To 09/25/2016				
Comments:										
<div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div>										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO (Max 2) <input type="checkbox"/>										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee: \$0.00				LOE: 0				
09/26/2012 To 09/25/2016										
This Action:		\$96,850.00				1,000				
Total:		\$96,850.00				1,000				
Work Plan / Cost Estimate Approvals										
Contractor WP Dated: 10/19/2015		Cost/Fee: \$96,850.00				LOE: 1,000				
Cumulative Approved:		Cost/Fee: \$96,850.00				LOE: 1,000				
Work Assignment Manager Name Damon Highsmith <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number 202-566-2504 FAX Number:				
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:				
Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: FAX Number:				
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:				

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 3-38**

Title: Unconventional Oil & Gas Engineering Support

Work Assignment Contracting

Officer's Representative (WACOR): Lisa Biddle

Alternate Work Assignment Contracting

Officer's Representative (Alternate WACOR): Jesse Pritts

Period of Performance (POP): September 26, 2015 through September 25, 2016

New Contracting Terminology From Environmental Protection Agency Acquisition Guide (EPAAG) Subsection 1.6.5
Contract-Level Contracting Officer's Representative (CL-COR) = Project Officer (PO)
Alternate Contract-Level Contracting Officer's Representative (Alternate CL-COR) = Alternate Project Officer (APO)
Work Assignment Contracting Officer's Representative (WACOR) = Work Assignment Manager (WAM)
Alternate Work Assignment Contracting Officer's Representative (Alternate WACOR) = Alternate Work Assignment Manager (AWAM)

I- Purpose

The purpose of this work assignment is to provide contractor tasks to support EPA's continued development of effluent limitations guidelines and standards (ELGs) and related support materials for the unconventional oil and gas industry. This is a continuation of work begun under WA 2-38.

II- Introduction

The Clean Water Act directs EPA to develop national regulations placing limits on the pollutants that are discharged by categories of industry to rivers and streams or to sewage treatment plants. This work assignment supports EPA's development of effluent limitations guidelines and standards (collectively referred to as ELGs) for the oil and gas extraction point source category (40 CFR Part 435).

EPA is developing a proposed rule to amend the Effluent Limitation Guidelines and Standards (ELGs) for the Oil and Gas Extraction Category, 40 CFR Part 435. Specifically, this rulemaking effort is focused on the development of pretreatment standards under Subpart C of Part 435.

EPA expects that the rule and related support materials and analyses will undergo revisions based on public comments information received in response to the April 7, 2015 proposed rule, and recently published literature. This period of performance (POP) will include analysis of comments, and associated revisions to analyses to address comments; preparing drafts and final publication versions of the final rule, preamble, and technical development document (TDD);

developing options and related briefings; preparing for and addressing comments from the final agency review process and the interagency review process; finalizing all supporting materials; and preparing the public rulemaking docket.

III- General Work Assignment Requirements (PWS Section 3.0)

Deliverable Formatting and Terminology

Throughout this work assignment, the contractor shall provide draft and final reports to EPA in electronic format, with hard copy format also provided when directed by the work assignment manager. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's Effluent Guidelines webpage. These documents posted to the Effluent Guidelines webpage must be Section 508 compliant.¹

Travel

Non-local travel by the contractor employees and/or subcontractors will be required to support the scope of this work assignment (e.g., attending conferences, public meetings). The contractor shall provide specific travel details and costs in a request for travel approval by the WACOR and the Contract-Level COR (CL-COR) before each trip occurs (as specified by the contract per clause H.32).

Event Expenses Not to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the Contracting Officer (CO), CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the CO.

Confidential Business Information

The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

with the procedures set forth in the “Security Plan for Handling Confidential Business Information Under the Clean Water Act” (September 2002) or its successor approved plans.

Identification as Contracting Staff

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

Limitation of Contractor Activities

The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the CO, CL-COR and WACOR.

Deliverable Due Dates

For the purpose of developing this work plan, the contractor shall assume the deliverable due dates in the tables for each task presented further. Major technical deliverables shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

IV- Tasks

Task 1: Program Management

The contractor shall prepare and submit a detailed work plan that outlines the approach and methodology that shall be used to perform the tasks identified in this Work Assignment. The work plan shall specify the work to be done for each task, and the allocation of personnel, hours and budget by task and deliverables. The work plan shall be submitted to the CL-COR and WACOR in accordance with contract requirements.

This task also includes contract management such as communications between EPA Contracting Officer Representatives and their respective contractor counterparts. These communications would concern the progress made on the work assignment tasks and coordination of activities to facilitate optimal contractor performance.

The contractor shall provide electronic copies of the monthly progress reports to the CO, CL-COR and WACOR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties. The contractor shall inform the CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

In addition to the monthly progress reports, the contractor shall prepare monthly and mid-monthly status summaries to the CL-COR and WACOR. The monthly and mid-monthly status reports shall list the following information by task: summaries of costs and LOE expended for the reporting period; a table of hours by personnel for each task; and the cumulative hours (LOE) and dollars (and the percentage of each) expended for each task. The mid-monthly and monthly summaries of costs and expenditures LOE shall be provided prior to the progress report. The contractor shall email copies to the CL-COR and WACOR.

TASK 1 DELIVERABLES	DEADLINES
Work Plan	In accordance with contract requirements
Progress Reports	monthly
Work assignment summaries	mid-monthly and monthly

Task 2: Quality Assurance

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or Programmatic Quality Assurance Project Plan (PQAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or PQAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project. This contract has an approved PQAPP for all necessary work envisioned under this work assignment. There is no primary data collection envisioned under this work assignment. However, the contractor will continue to utilize existing data that is available in the literature, from conferences and meetings, and compiled in site visits conducted under previous periods of performance.

The contractor has an approved supplemental QAPP (SQAPP) that provides specific details and criteria regarding data source categorization and source selection that is specific to the quality requirements under this project. Because this project involves using the collected data to describe the industry and to characterize the wastewater generated by the industry, but not to develop numeric limits, the source characterization strategies outlined in the SQAPP are sufficiently rigorous and appropriate for this project.

Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 2-1** below.

Table 2-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-12-021. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). However, EPA has determined that the Contractor is operating under the existing PQAPP and that the PQAPP, and the supplemental information in the SQAPP prepared under WA 1-38, address QA requirements

for this work assignment. In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing data to support the development of Effluent Limitations Guidelines and Standards.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA data bases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Table 2-2 at the end of this Task demonstrates how the quality elements are addressed for this project through the contract-level programmatic QAPP (PQAPP), the UOG project-specific supplemental QAPP (SQAPP), and related project documentation.

Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Reports) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP and SQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities

performed to support implementation of this work assignment, problems encountered, deviations from the PQAPP and SQAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis that the information is capable of being substantially reproduced. To support compliance with these data transparency/ data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and SQAPPs.) The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as "EPA's Information Quality Guidelines," describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA's Information Quality Guidelines indicate that "especially rigorous robustness checks" should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractors should indicate which results were obtained using the tools (SOPs, checklists, and guidelines) that the Contractor designates as confidential so that the WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the WACOR, the Contractors may be requested to prepare pre-dissemination review checklist as described in Section 5.5 of the Office of Water Quality Management Plan, February 2009. If this is required, the WACOR shall notify the Contractor through written technical direction.

TASK 2 DELIVERABLES	DEADLINES
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
A1. Title & Approval Sheet			
Project title		TITLE PAGE	
Organization's name	TITLE PAGE		
Effective date and/or version identifier	TITLE PAGE	TITLE PAGE	
Dated signature of Organization's project manager		APPROVAL SHEET	
Dated signature of Organization's QA manager	APPROVAL SHEET	APPROVAL SHEET	
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	APPROVAL SHEET	APPROVAL SHEET	
Revision History	TABLE INCLUDED	TABLE INCLUDED	
A2. Table of Contents			
Includes sections, figures, tables, references, and appendices	TOC	TOC	
Document control information indicated (when required by the EPA Project Manager and QA Manager)			N/A
A3. Distribution List			
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	SEC 2.1	SEC 2.1	
A4. Project/Task Organization			
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	SEC 2.4 – GENERAL	SEC 2.2	
Organization chart shows lines of authority & reporting responsibilities	SEC 2.4 – GENERAL	SEC 2.2	
Project QA manager position indicates independence from unit collecting/using data	SEC 2.4	SEC 2.2	
A5. Problem Definition/Background			
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	SEC 2.2-2.3 GENERAL	SEC 2.2	Also see Technical Development Document (TDD) developed for proposal under WA 2-38 (Proposal TDD)
Identifies project objectives or goals	SEC 2.2-2.3 - GENERAL	SEC 2.2	Also see Proposal TDD
Historical & background information	SEC 2.3 - GENERAL	SEC 2.2	Also see Proposal TDD
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	SEC 2.3 - GENERAL	SEC 2.2	Also see Proposal TDD

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
A6. Project/Task Description			
List measurements to be made/data to obtain	SEC 2.3 - GENERAL	SEC 2.2	
Notes special personnel or equipment requirements		SEC 2.2	
Provides work schedule	SEC 2.3		Details in WA and work plans from current and past UOG WAs
A7. Overall Quality Objectives & Criteria			
States overall quality objectives and limits needed to support the project goals and objectives cited in A5	SEC 4.2-4.3	SEC 3.0-3.2	
A8. Special Training Requirements/ Certifications			
Identifies specialized skills, training or certification requirements	SEC 2.6		
Discusses how this training will be provided/the necessary skills will be assured and documented	SEC 2.6		
A9. Project-level Documents & Records			
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	SEC 2.1	Sec 2.1	
Identifies final work products that will result from the project		SEC 2.2	Details in WA and work plans from current and past UOG WAs
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	SEC 2.8 - GENERAL	SEC 4.0	
B1. Data Needs			
Detailed list/description of the specific data elements needed to support project goals		SEC 3.0	
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)		SEC 2.2 & 3.0	
If project includes development or update of a project database, QAPP identifies and defines each database field	SEC 4.1, 4.2	SEC 3.2 – General	
B2. Potential Data Sources			
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	SEC 3.1, 4.0-4.3	SEC 2.2, 3.1	
If literature searches are used, describes the search engines that will be used and key search terms	SEC 4.1		Majority of references from public comments

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	SEC 4.2		
For other potential sources, describe the potential sources & rationale for considering or using each one	SEC 4.1		Addressed generally in PQAPP, not very applicable to this project
B3. Criteria for Selecting Data Sources			
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	SEC 4.1	SEC 3.1	
Explains rating system used to evaluate source against each criterion		SEC 3.1	
B4. Data Value Selection Approach			
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project		SEC 3.0-3.2	
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented		SEC 3.1	
B5. Resolving Data Gaps			
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	SEC 4.1, 4.3, SEC 7	SEC 3.1	
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	SEC 4.1, 4.3, SEC 7		
B6. Data Gathering Documentation and Records			
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them		SEC 3.1	
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	SEC 2.1	SEC 3.2	

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
C1. Standardization of Data Elements			
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	SEC 4, SEC 7		Contract requirement.
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, µg/L for chemical data), identifies the standard units that will be required for each data element			N/A
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	SEC 4, SEC 7		
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	SEC 4, SEC 7		
C2. Data Entry			
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	SEC 4, 7, 8.3-8.4		
C3. Merging or Uploading Electronic Data from Existing Sources			
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	SEC 4, 8.3		
C4. Data Review			
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	SEC 8.0-8.3		
C5. Data Storage and Manipulation			
Describes how the existing data will be stored	SEC 8.3-8.6		
Describes who will be responsible for access to and maintenance of the stored data	SEC 8.3-8.6		
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	SEC 8.1		

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	SEC 8.3-8.6, 9.2		
D1. Data Quality Verification and Data Quality Reporting			
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	SEC 8.3-8.4		
Describes how these determinations will be documented and reported		SEC 4.0	
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	SEC 8.3	SEC 4.0	
D2. Use/Analysis of the Existing Data			
Provides details regarding the exact means in which the data will be used to meet project objectives		SEC 2.2, 3.0-3.1	
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	SEC 4, 7		
Includes applicable calculations and equations (if known) or explanations of how they will be developed			
Includes plans for excluding outliers	SEC 3.1		
D3. Methodology Documentation and Conceptual Review			
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	SEC 4.1	SEC 3.1	
D4. Technical Review of the Data Analysis			
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	SEC 4, 7	SEC 4.0	
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	SEC 4.1		

Table 2-2. Explanation of quality elements and how they are addressed under the Unconventional Oil and Gas Extraction Engineering Support Work Assignment 1-38 through 3-38 under contract number EP-C-12-021

QAPP Element	Applicable Section in PQAPP	Applicable Section in SQAPP	Explanatory Comments
D5. Final Verification of Data Analysis and Reconciliation with User Requirements			
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives		SEC 4.0	
Describes how the results of this assessment will be documented		SEC 4.0	
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	SEC 4, 7		

Task 3: Confidential Business Information

During the course of the work assignment, the contractor shall be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract performance work statement, Section 3.0, for all tasks in this WA, as applicable. The contractor shall obtain CBI security clearance to use CBI information as outlined in Section 3.0 of Contract EP-C-12-021. The contractor shall utilize CBI information in accordance with contract requirements and limitations to include using its most recent "Security Plan for Handling Confidential Business Information under the Clean Water Act." The contractor shall also utilize CBI information in accordance with contract requirements and limitations, including the TSCA CBI security plan as required.

TASK 3 DELIVERABLES	DEADLINES
A CBI program in compliance with the requirements of contract EP-C-12-021 and the requirements of the contractor's CBI Plan.	Ongoing

Task 4: General Technical Support

Using information provided by the WACOR, along with information gathered or developed by the contractor, the contractor shall assemble information, create and/or modify documents and perform analyses related to oil and gas operations as directed by the WACOR through written technical direction. The tasks may include work such as:

- Support in preparing or gathering data for presentations at conferences
- Summarizing data to brief management
- Collecting and analyzing secondary data (including targeted literature searches), which may involve writing memos which summarize the data/literature

- Revising work products prepared under WA 0-38, 1-38, and 2-38 based on comments provided by EPA
- Attending meetings or preparing materials and participating in meetings, conferences and workshops to support EPA's outreach activities to the public and industry (these materials may include reports, brochures, maps, or other presentation materials)
- Attending oil and gas industry technical meetings and/or conferences as directed by EPA
- Developing of questions and answers for publication on EPA's website
- Contacting State oil and gas agencies to collect information about common wastewater management practices and availability of underground injection, produced water treatment facilities, and POTWs in each State

For purposes of preparing a work plan, the contractor shall assume that there shall be approximately thirty (30) written technical directives requiring quick turn-around (1-2 days of support) and the contractor will be asked to attend two conferences and provide write ups from them. The contractor should also assume two targeted literature review tasks may be assigned.

TASK 4: DELIVERABLES	DEADLINES
General technical support (as above)	2 days after receiving technical direction, or as specified in technical direction, from the WACOR
Literature review memo(s)	By written technical direction

Task 5: Environmental Engineering Analyses

The contractor shall revise analyses and engineering support memoranda developed under previous work assignments (1-38, 2-38) based on information received during public comments, internal EPA review, and new sources identified by EPA since proposal. This includes revisions to supporting analyses and memos that are referenced by the TDD, or were included in the rulemaking record. This includes the following supporting memoranda:

- Analysis of Active Underground Injection for Disposal Wells.
- Analysis of Centralized Waste Treatment Facilities (CWTs) Accepting UOG Wastewater.
- Analysis of Pennsylvania Department of Environmental Protection's Oil and Gas Waste Reports.
- Analysis of POTWs Accepting UOG Wastewater.
- Data Compilation Memorandum for the UOG Technical Development Document. Office of Water Engineering and Analysis Division.
- Data Compilation Memorandum for the Wastewater Characterization Data in the UOG Technical Development Document. Office of Water Engineering and Analysis Division.
- Drilling Fluid Wastewater.
- Summary of Discussions with Native American Tribes Regarding Unconventional Oil and Gas.
- Treatment Technologies Used to Treat Unconventional Oil and Gas Wastewater. Office of Water Engineering and Analysis Division.

- Radioactive Elements in the Unconventional Oil and Gas (UOG) Industry. Office of Water Engineering and Analysis Division.
- Summary of Conventional Oil and Gas Extraction Wastewater.

Based on public comments received on the proposal, the contractor may be asked update the underlying data and analyses that are summarized as part of the TDD and supporting memos. For planning purposes, the contractor can assume 50 new data sources (in the form of articles, tables, and conference presentations) are identified during the performance period and will be reviewed and summarized for EPA and potentially incorporated into the analyses.

The contractor shall also plan on doing a comparative analysis between the TDD and related materials that are published (or planed for publication) by government entities (e.g., EPA's Office of Research and Development) and/or industry or environmental organizations. For planning purposes, the contractor can assume that four, 50 page documents will be part of these reviews and a summary of discrepancies will be requested for each.

The contractor can plan for two rounds of EPA comments on each revised memo, each requiring revisions, in order to finalize these deliverables prior to final rule docket upload and rulemaking publication.

The contractor should also anticipate that four, four-hour sessions will be set up where the contractor will help interested stakeholders at EPA to better understand changes made to the underlying data and analyses presented in the TDD and supporting memos.

TASK 5: DELIVERABLES	DEADLINE
Comparative analysis with other government publications	Within 10 days of receiving technical direction from EPA
Review of new data sources provided during public comment period	By written technical direction from EPA.
Updated version of memorandum based on new data sources identified after proposal.	By written technical direction from EPA.
Revised support memorandum for the final rule, based on comments from EPA	Within 7 days of receiving comments from EPA, or as otherwise specified by EPA
Final support memorandum for the final rule, based on final comments from EPA	Within 7 days of receiving comments from EPA, or as otherwise specified by EPA

Task 6: Development Document Support

The contractor shall revise the Technical Development Document (TDD), delivered under the previous WA (2-38). Revisions are anticipated:

- Version 1 - Based on public comments and updated data and memorandum discussed in Task 5,
- Version 2 - Following Final Agency Review (FAR) of the final rule package, and
- Version 3- Following interagency review of the final rule package.

For planning purposes, assume two rounds of revisions will be required at each stage.

TASK 6: DELIVERABLES	DEADLINE
Initial Revised TDD – Version 1	Within 14 days of receiving comments and direction from EPA
Revisions to Version 1 based on EPA comments	Within 7 days of receiving review comments from EPA
Initial Revisions to TDD based on FAR comments – Version 2	Within 14 days of receiving comments and direction from EPA
Revisions to Version 2 based on EPA comments	Within 7 days of receiving review comments from EPA
Initial Revisions to TDD based on Interagency Review comments – Version 3	Within 14 days of receiving comments and direction from EPA
Revisions to Version 3 based on EPA comments	Within 7 days of receiving review comments from EPA

Task 7: Record Support

This task includes maintaining the electronic documents and record materials that support the rulemaking, as well as work associated with updating EPA and/or contractor generated record documents, as needed based on data and comments that are received during the POP.

The contractor shall assemble and maintain a record of all documents relevant to the rulemaking proceedings. The contractor shall request authorization from EPA to contact the Water Docket and enter information into FDMS. When authorization is received, the contractor shall contact the Office of Water Docket to ensure that the record will meet the dockets requirements including any electronic docket requirements. This includes preparation of electronic versions of documents for the Agency's electronic docket system. The contractor will be the lead for all uploading/coordination of record items for this rulemaking docket, therefore this will include deliverables and record items submitted by other contractors supporting the rulemaking. The index of rulemaking record materials shall be submitted to the WACOR quarterly and at least one month prior to upload (for planning purposes, upload can be expected to occur on August 20, 2016). The record documents and index are to be delivered to the WACOR upon completion of the Work Assignment or when directed by the WACOR in writing. The contractor will support

the uploading of all record materials for the final rulemaking to the electronic docket prior to final rule publication (for planning purposes, publication can be expected on August 20, 2016).

In addition, the contractor shall provide support in responding to Freedom of Information Act (FOIA) requests for records. Such support includes researching existing documentation to identify potentially responsive records for the FOIA request and/or any FOIA appeal, and assisting EPA in compiling responsive documents. For purposes of developing the work plan, the contractor should assume that there will be approximately five FOIA requests for which support described above may be required.

TASK 7: DELIVERABLES	DEADLINE
Maintain both the paper and the electronic records	Ongoing throughout the period of performance
Submit index of record materials to WACOR	Quarterly (each due on the 15 th of November, February, May and August respectively) and one month prior to upload (expected to be approximately August 20, 2016)
Submit record documents and index to WACOR	Upon completion of the Work Assignment or written technical direction from the WACOR before the completion of the WA.
Complete the upload of documents to the docket for the final rule	Prior to final rule publication (expected on January 20, 2016)
Identify/compile FOIA-responsive records	By written technical direction

Task 8: Comment Support and Documentation

The contractor shall provide technical support to EPA's efforts to respond to public comments submitted to the public rulemaking docket. These comments may be in response to 304(m) notice, as they pertain to the unconventional oil and gas industry (including shale gas extraction and coalbed methane), the proposed rule, and any subsequent NODAs. The contractor shall also provide technical support to EPA's efforts to respond to interagency review comments.

Support for response to public comments may include, but is not limited to, the following activities: reviewing, assessing, and compiling public comments; supporting the coding of comments; tracking comments and comment responses in a spreadsheet; compiling information that will be used to develop responses to comments; and drafting responses as needed. Responses may consist of individual comment responses, or they may be in the form of essays that address major issues or frequently stated comments. The contractor shall provide monthly tracking reports regarding the status of comment response activities, including summary statistics for the number of comments for which responses have been drafted (or not drafted) and the review/approval status of the responses.

TASK 8: DELIVERABLES	DEADLINE
Draft portions of response to public comments received for proposed rule	By written technical direction
Monthly report of status of comment response activities	Monthly

Task 9 - Regulatory Support (PWS Section 3.5, 3.6)

Upon written technical, the contractor shall assist EPA in developing and reanalyzing regulatory options and its implementation, based on comments on the proposed regulation provided during the comment period. Technical support under this task shall include preparing text for use in Federal Register preambles, providing technical assistance in developing revisions to the regulations, and assisting in the development of notices of data availability. Tasks may also include providing supporting information and documentation for regulatory option packages, briefings, and selected analyses and data summaries. Deliverables under this task may include quick-response tasks.

TASK 9 – DELIVERABLE	
Deliverable	Due Date
Draft text for inclusion in Federal Register preambles and notices of data availability	By written technical direction
Analysis of regulatory options	By written technical direction

Task 10 – Beneficial Use Literature Review (PWS Section 3.5, 3.6)

The Agriculture and Wildlife Use Subcategory of the ELG for Oil and Gas Extraction allows the discharge of produced water from oil and gas wells in the Continental United States west of the 98th Meridian. Produced water can be discharged if it is of good enough quality to be used for wildlife propagation, livestock watering, or agricultural uses and it is actually put to that use during discharge. (See 40 CFR 435, Subpart E) The ELG, issued in 1979, does not include additional information describing what is meant as “good enough quality” or what exactly is included in the universe of wildlife propagation, livestock watering, or irrigation. No numeric limits for TDS and related pollutants are suggested by the regulation or the documents developed for the issuance process. As a result of this limited clarity different state agencies and the EPA have interpreted “of good enough quality” very differently.

Under the previous work assignment ERG developed a literature summary tool that compiled information on wildlife, livestock and irrigation uses and relevant constituents that may be found in oil and gas extraction wastewater.

This task includes continuation of support on this tool. The contractor may be asked to make edits to the tool based on beta testing performed by Region 8 and other EPA stakeholders. The contractor can assume that two rounds of comments will need to be addressed by making updates to the tool, which may include Macro programming and adding literature (can assume 10 new sources may be identified).

The contractor should also plan to address comments on the set of instructions (developed under WA 2-38 for how the Region may update the tool). ERG can assume that the instructions will undergo two rounds of EPA review and a revised version will need to be delivered following each review.

TASK 10: DELIVERABLES	DEADLINE
Updated tool	Within 21 days of receiving technical direction from EPA
Revised draft instruction for updating the tool	Within 10 days of receiving comments from EPA
Final instruction for updating the tool	Within 10 days of receiving comments from EPA

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-38			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021		Contract Period 09/26/2012 To 09/25/2016 Base Option Period Number 3		Title of Work Assignment/SF Site Name Unconventional Oil & Gas					
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW 3.0, 3.1, 3.3, 3.4, 3.5					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 09/26/2015 To 09/25/2016			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO <input type="checkbox"/> (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee: \$0.00		LOE: 0					
09/26/2012 To 09/25/2016									
This Action:		\$333,492.00		3,538					
Total:		\$333,492.00		3,538					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 10/14/2015		Cost/Fee: \$333,492.00		LOE: 3,538					
Cumulative Approved:		Cost/Fee: \$333,492.00		LOE: 3,538					
Work Assignment Manager Name Lisa Biddle <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number 202-566-0350 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-38				
						<input type="checkbox"/> Other <input checked="" type="checkbox"/> Amendment Number: 000001				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016			Title of Work Assignment/SF Site Name				
			Base Option Period Number 3			Unconventional Oil & Gas				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW N/A					
Purpose: <input type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input checked="" type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval					Period of Performance From 11/20/2015 To 09/25/2016					
Comments: The purpose of this Amendment 1 is to ADD Karen Milam (Phone: 202-566-1915; Fax: 202-566-1053; E-Mail: milam.karen@epa.gov) as an Alternate WACOR to this Work Assignment.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO (Max 2) <input type="checkbox"/>										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:			LOE:					
09/26/2012 To 09/25/2016										
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee:			LOE:			
Cumulative Approved:				Cost/Fee:			LOE:			
Work Assignment Manager Name Lisa Biddle							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number 202-566-0350			
							FAX Number:			
Project Officer Name Meghan Hessenauer							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number: 202-566-1040			
							FAX Number:			
Other Agency Official Name							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number:			
							FAX Number:			
Contracting Official Name Brad Heath							Branch/Mail Code:			
_____ (Signature) (Date)							Phone Number: 513-487-2352			
							FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-41				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016 Base Option Period Number 3			Title of Work Assignment/SF Site Name Life-Cycle Assessment				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 12/11/2015 To 09/25/2016				
Comments:										
<div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div>										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO <input type="checkbox"/> (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:			LOE:					
09/26/2012 To 09/25/2016										
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee:			LOE:			
Cumulative Approved:				Cost/Fee:			LOE:			
Work Assignment Manager Name Jennifer Cashdollar <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number 513-569-7142 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-12-021
WORK ASSIGNMENT 3-41**

TITLE: Life-Cycle Assessment and Cost Analysis of Water and Wastewater Treatment Options for Sustainability

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR):

Jennifer Cashdollar
Microbiological and Chemical Exposure Assessment Research Division
National Exposure Research Laboratory
Office of Research and Development
U.S. Environmental Protection Agency
26 W. Martin Luther King Dr. MS-587
Cincinnati, OH 45268
Phone: (513) 569-7142
Fax: (513) 569-7584
E-Mail: cashdollar.jennifer@epa.gov

**ALTERNATE WORK ASSIGNMENT CONTRACTING OFFICER'S
REPRESENTATIVE (ALTERNATE WACOR):**

Diana Bless
Sustainable Technology Division
National Risk Management Research Laboratory
Office of Research and Development
U.S. Environmental Protection Agency
26 W. Martin Luther King Dr. MS-587
Cincinnati, OH 45268
Phone: (513) 569-7674
Fax: (513) 569-7111
E-Mail: bless.diana@epa.gov

PERIOD OF PERFORMANCE: December 11, 2015 through September 25, 2016

NOTE: Notwithstanding any other statement in the PWS of this work assignment, the contractor shall not conduct any IT work, providing either services or equipment, until further written notification from the Contracting Officer is received.

BACKGROUND

As one of the largest federal water research and development laboratories in the United States, the Environmental Protection Agency generates innovative solutions that protect human health and the environment. The Office of Research and Development's (ORD) Safe and Sustainable Water Resources (SSWR) Program is the principle research lead seeking metrics and tools to compare the tradeoffs between economic, human health and environmental aspects of current and future municipal water and wastewater services. Changes in drinking water and wastewater

management have typically resulted from new regulations, which focus on developing and implementing additions to the current treatment and delivery schemes. However, these additions are generally undertaken in the absence of a system's holistic view and result in transferring issues from one problem area to another. Future alternatives not only need to address the whole water services physical system, but also must address changes in human behavior, institutions, and water governance to aid in the provision of more sustainable water services such that water scarcity is eliminated. Furthermore, these sustainable systems must be based on resource recovery (water, energy, nutrients etc.). Therefore, a range of metrics and tools need to be agreed upon to facilitate solutions that identify "next-generation" sustainable municipal water and wastewater systems, as well as to identify possible regulatory/policy steps to facilitate this evolution.

PURPOSE

The Contractor shall provide data collection and analysis which will then be used for establishing a model for using an LCA framework relevant to understanding water and wastewater management. In particular, the Contractor will focus on alternative wastewater treatment options for resource recovery and different application scales for decentralization; in addition, if time permits, the contractor may also focus on a water balance analysis within the hydrological cycle for systems like the Cincinnati, Ohio area which can be used to improve LCA and energy tools in water systems. For this research, an EPA Technical Team consisting of experts in microbial risk assessment, chemical risk assessment, LCA, and sustainability analysis will interact with the Contractor to provide timely, pragmatic, and decisive responses to questions, which will inevitably arise regarding overcoming obstacles encountered in the course of the work. The EPA Technical Team will serve as liaisons between the Contractor and a network of experts within EPA who can be called upon to provide necessary data such as technical details of water treatment technologies, appropriate values for key model parameters, and pragmatic approaches to incorporating findings from prior assessments into the LCA framework.

GENERAL REQUIREMENTS

In providing support under the tasks described in the WA, the contractor also shall adhere to the following general requirements:

Databases and Computer programs

The contractor shall ensure that the updated databases, computer programs and the corresponding documentation developed under this contract are accessible to the Contract Level Contracting Officer's Representative (CL-COR) and the WACOR. For better quality assurance and control, all changes in databases are documented chronologically in the databases according to QAPP requirements. The contractor shall use software packages that are relevant to particular statistical analysis, generally acceptable by experts as being reliable for the statistical analysis, and allow for any necessary data modification. The program shall identify the origin of the input data sets (e.g., version X supplied by EPA on specific date).

Deliverables

The contractor shall provide documentation in computer files, and in hardcopy, upon specific request. When appropriate (e.g., in a report rather than data listing), the contractor shall clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources,

and data that support the results and any recommendations. The contractor also shall document alternative methods, procedures, and assumptions that the contractor considered in the analysis. Further, the documentation shall be labeled with the name of the contractor and the EPA contract number.

The contractor shall ensure that documentation is created using, or easily converted to, Agency standard software formats (e.g., Microsoft Office) to facilitate EPA use and review.

Confidential Business Information

The contractor will be provided with technical information as determined by the WACOR who will also coordinate the transfer of all information. Some of the information provided by EPA may be Confidential Business Information (CBI). After receiving CBI, the contractor shall handle and analyze CBI under procedures specified in the approved contract CBI security plan and 40 CFR Part 2 Subpart B, and in accordance with contract requirements and limitations.

Contractor Identification

To avoid any perception that contractor personnel are EPA employees, the contractor shall assure that contractor personnel are clearly identified as independent contractors of EPA when attending meetings with outside parties or visiting field sites. Further, if the contractor has prepared briefing materials, the material should clearly indicate that they have been provided by a contractor working for EPA.

Work plan

The contractor shall prepare a detailed work plan covering the tasks in this work assignment. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, and a detailed cost estimate by task and staffing plan.

TASK DESCRIPTION

Task 1, which includes the completion of LCA of different membrane bioreactor (MBR) systems, must be performed as a priority over task 2. If time and hours permit, components of task 2 will be discussed with the EPA Technical Team in order to determine the priority and the focus under this task.

Task 1: Finalizing of LCA and LCC of MBR in different scales

In a previous period of performance, the Contractor provided support in environmental and economic life cycle assessments (LCA) that evaluated the environmental outcomes and costs associated with MBR used as an alternative treatment technology under different scales and population density scenarios. A final report has been submitted to EPA. EPA will develop a manuscript describing the findings of the report. EPA may need assistance from the Contractor in finalizing the report, performing additional in-depth data analysis such as methane dissolution factor, climate factors, etc., formatting figures and tables, as well as responding to reviewer comments from the manuscript. Specifically, the Contractor will:

1. Perform additional sensitivity analysis, if needed.
2. Revise the LCA, if needed.
3. Review the manuscript and aid EPA in revisions, if needed.

4. Provide responses to reviewer comments, if needed.

Deliverable: Sensitivity analysis and revised LCA within 2 weeks of request; manuscript review within 2 weeks of requested review; response to review/revisions to manuscript within 2 weeks of request.

Task 2: LCA and LCC of Alternative Wastewater Treatment Options

If time and hours permit, and Task 1 is completed, the EPA Technical Team shall work with the Contractor to identify areas where water balance analysis that involves various green infrastructure may be needed. Current needs include the treatment performances, LCA and LCC of constructed wetland, infiltration gallery/basin in purifying reclaimed water, storm water and hydrant flushing water, and their roles within water balance analysis for systems like Cincinnati, Ohio or Ft. Irwin area. Treated water can be served as non-potable water source. The water balance analysis may link LCA and emergy model energy-water nexus. However, if other treatment or resource recovery needs arise that take priority, the EPA Technical Team may work with the Contractor to identify priorities. If this is possible, the WACOR will prepare an amendment to this Statement of Work which outlines this work, and its associated deliverables, in more detail based on the identified priority.

Task 3: Application of Environmental Support and Cost Metrics to an LCA Model

EPA ORD has been working for the past 5 years to develop new metrics for evaluating the sustainability of value chains for use in a life cycle (LCA) context. While a number of metrics have been considered, metrics for total environmental support (TES) and total cost (TC) have been advanced to the greatest degree.

The metric for total environmental support is based on a method of energy accounting called emergy. This metric measures total direct and indirect environmental requirements to support a value chain or material by summing the energy supporting land, water and other resources used over the life cycle of material/product. A library of characterization factors for emergy for use in life cycle assessment studies has been prepared by a contractor under technical direction of EPA and a report describing that library was provided. EPA is finalizing that library and a report describing it that will be made available to the contractor.

The metric for total cost, also called green net value added in the supply chain context, is a life cycle costing metric that also takes into account externality costs in the form of human health and environmental damages. A spreadsheet with characterization factors and steps for performing total cost calculations for LCI data are included in a spreadsheet.

EPA will share with the contractor with the original libraries and associated documentation for these metrics.

The objective of this work assignment is to demonstrate the application of these methods through augmentation of a full economy life cycle model and calculation of these metrics through that model. The openIO US LCI model that EPA has developed in openLCA software will be used for this case study.

Specifically, the Contractor will:

1. Augment the openIO model with the requisite elementary flows
To enable calculation of these metrics in the LCA context. While the openIO model may contain many of the flows, new flows may have to be added to perform this analysis. New flows should be taken from or added to the EPA Master Elementary Flow list which will be provided to the contractor. Preparation of this flow data can draw upon materials, energy, land and water resources already in the openIO model, but may require refinements and additions.

Deliverable: A version of the openIO model with added elementary flows to enable TES and TC calculations.

2. Prepare results of a case study LCA model
A case study of application of this metrics to the openIO model in openLCA for the US economy final demand. The case study should be performed within openLCA to the fullest extent possible. The results should include comparisons with other relevant LCIA methods already available for use with the openIO model, such as total water use and GHG emissions.

Deliverable: LCA results plus final TES and TC LCIA methods or supporting spreadsheets used for calculations.

3. Prepare relevant sections for a manuscript describing this case study.
The contractor shall provide a written description of the methods used, results of the case study, and the potential benefits of these methods in the form that can be incorporated into a technical peer-reviewed manuscript.

Deliverable: Sections for a manuscript

SPECIAL CONSIDERATIONS

The contractor shall prepare an initial cost estimate for each task. Before starting an approved task, the contractor will meet with the WACOR or his/her technical advisor in order to ensure that all the steps in the task are clearly understood. Technical direction will be given to the contractor via the WACOR in the form of an email. Technical discussion, including, but not limited to, discussions of scheduling availability for planning around deliverables, troubleshooting regarding the tasks, issues with data interpretation, and/or other questions regarding the work assignment can be done between the contractor and the PIs and EPA Technical Team. Such discussion does not constitute technical direction.

Outputs shall be in the form of detailed monthly reports describing progress made in each task submitted to the CL-COR and WACOR by the 15th of the month. These reports shall include a summary of work that has been accomplished over the past month any problems that arose over the month, and a summary of deliverables produced over the month, if applicable. The monthly reports must include a summary of expenses for the period as it relates to the overall project budget. In addition, this work assignment status report shall provide the described work

performed within each task and shall address problems and/or solutions (including issues relating to quality assurance and quality control), work planned for next reporting period, staffing, budget, and any changes in technical direction. EPA may monitor progress through regular meetings between the Contractor and the WACOR. Changes in procedures to overcome technical difficulties can be made by mutual agreement between the contractor and the WACOR.

ACCEPTANCE PROCEDURE FOR DELIVERABLES

Deliverables shall be delivered to the WACOR. The WACOR will advise the contractor of any problems with deliverables within 1 week after receipt. The contractor shall submit the revised deliverable within 3 calendar days after receipt of the WACOR's comments.

MANAGEMENT CONTROLS

The support provided is based on the specific tasks in this statement of work. Any changes will be addressed by amendments to the statement of work. Technical direction will be provided by the WACOR to the Contractor via email. Electronic copies of all work requests/technical direction will be available upon request to the CL-COR, WACOR and CO. The Contractor shall ensure that its personnel are aware that they are not to proceed with any technical directives that are not addressed in this statement of work and/or that come from an unauthorized source.

SPECIAL RESTRICTIONS

The Contractor shall ensure personnel skills are maintained in accordance with the Contractor's Program Management Plan which has been incorporated under the terms of the contract by reference.

OTHER REQUIREMENTS

The contractor shall provide written notification to the CO, CL-COR and WACOR when 75 percent of the hours and/or funds have been spent on this work assignment.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-41			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016 Base Option Period Number 3			Title of Work Assignment/SF Site Name Life-Cycle Assessment			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 12/11/2015 To 09/25/2016			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee: \$0.00		LOE: 0					
09/26/2012 To 09/25/2016									
This Action:		\$147,851.00		1,633					
Total:		\$147,851.00		1,633					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 01/06/2016		Cost/Fee \$147,851.00		LOE: 1,633					
Cumulative Approved:		Cost/Fee \$147,851.00		LOE: 1,633					
Work Assignment Manager Name Jennifer Cashdollar <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 513-569-7142			
						FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 202-566-1040			
						FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number:			
						FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 513-487-2352			
						FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-44	
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:	
Contract Number EP-C-12-021		Contract Period 09/26/2012 To 09/25/2016		Title of Work Assignment/SF Site Name Hydraulic Fracturing Study			
Base		Option Period Number 3					
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW 3.0 and 4.0			
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval				Period of Performance From 09/26/2015 To 09/25/2016			
Comments: Work shall not commence on this Work Assignment until September 26, 2015.							
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund							
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.							
SFO (Max 2) <input type="checkbox"/>							
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents) Site/Project (Max 8) Cost Org/Code (Max 7)
1							
2							
3							
4							
5							
Authorized Work Assignment Ceiling							
Contract Period: 09/26/2012 To 09/25/2016		Cost/Fee:		LOE:			
This Action:							
Total:							
Work Plan / Cost Estimate Approvals							
Contractor WP Dated:		Cost/Fee:		LOE:			
Cumulative Approved:		Cost/Fee:		LOE:			
Work Assignment Manager Name Lisa Matthews						Branch/Mail Code:	
_____ (Signature) (Date)						Phone Number 202-564-6669	
						FAX Number:	
Project Officer Name Meghan Hessenauer						Branch/Mail Code:	
_____ (Signature) (Date)						Phone Number: 202-566-1040	
						FAX Number:	
Other Agency Official Name						Branch/Mail Code:	
_____ (Signature) (Date)						Phone Number:	
						FAX Number:	
Contracting Official Name Brad Heath						Branch/Mail Code:	
_____ (Signature) (Date)						Phone Number: 513-487-2352	
						FAX Number:	

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 3-44**

Title: Evaluation of Information on Hydraulic Fracturing

Work Assignment Contracting

Officer's Representative (WACOR): Lisa Matthews

Period of Performance (POP): September 26, 2015 through September 25, 2016

New Contracting Terminology From Environmental Protection Agency Acquisition Guide (EPAAG) Subsection 1.6.5
Contract-Level Contracting Officer's Representative (CL-COR) = Project Officer (PO)
Alternate Contract-Level Contracting Officer's Representative (Alternate CL-COR) = Alternate Project Officer (APO)
Work Assignment Contracting Officer's Representative (WACOR) = Work Assignment Manager (WACOR)
Alternate Work Assignment Contracting Officer's Representative (Alternate WACOR) = Alternate Work Assignment Manager (AWACOR)

Background

At the request of Congress, EPA is conducting a study of the potential impacts of hydraulic fracturing for oil and gas on drinking water resources.

The contractor shall follow-up on work conducted under 2-44 of the previous option period.

The Contractor shall provide the deliverables outlined below to the EPA Work Assignment Manager (WACOR). All text deliverables shall be compatible with MS Word and provided in both electronic and hard format.

WORK ASSIGNMENT TASKS

Task 0 – PREPARE WORK PLAN AND MONTHLY REPORTS

As part of this work assignment, the Contractor shall prepare a detailed work plan that describes the Contractor's approach to each of the following tasks, and includes a proposed schedule, staffing plan and budget for the overall work assignment. The Contractor's work plan shall include estimated Level of Effort (LOE) by task. The work plan also shall include procedures to be used for determining absence of conflict of interest.

Deliverable 0A - Within 3 working days of receipt of the work assignment, the Contractor shall schedule a conference call with the WACOR and appropriate EPA and Contractor staff to clarify outstanding questions and confirm the schedule and specific tasks.

Deliverable 0B - The contractor shall submit a detailed work plan in accordance with contract requirements.

Deliverable 0C - The contractor shall provide EPA with monthly financial/technical progress reports. These monthly reports shall identify QA/QC activities performed to support implementation of this work assignment, problems encountered, and corrective actions taken.

TASK 1 – MEETING SUPPORT

EPA will continue state and tribal engagement and coordination on research products and analytical needs associated with EPA's hydraulic fracturing drinking water study and the Draft Assessment. EPA will also regularly engage with technical experts from key stakeholder groups, including industry, non-governmental organizations, other federal agencies and the academic community, in an effort to assure that we have ongoing access to a broad range of expertise and data outside the Agency, improve public understanding of the goals and design of the study, obtain timely and constructive feedback on data and analysis developed in the study, and assure that EPA is current on changes in industry practices and technologies so the Draft Assessment reflects an up-to-date picture of hydraulic fracturing operations. Information sharing among technical experts from diverse backgrounds and interests is important to ensure that EPA has all the information it needs to provide the best available science.

The Contractor shall support these state engagement and broader stakeholder outreach efforts by assisting with the planning and coordination of meetings. Support duties include: sending and tracking invitations; organizing and coordinating meeting materials; liaising with attendees and presenters; tracking and downloading presenters' slides; and preparing meeting folders. The Contractor may be asked to develop PowerPoint presentations for EPA. The Contractor may also be asked to assist with the set up and management of webinars and/or other telepresence services in support of the stakeholder effort. For purposes of preparing the work plan, the Contractor shall assume preparations for five (5) one-day stakeholder meetings.

Deliverable 1A - The Contractor shall provide nametags, placards and signage 1 week prior to the meeting.

Deliverable 1B - Final meeting materials will be due by 3 business days prior to the meeting.

TASK 2 – LETTER REVIEWS

The Contractor shall plan, organize and conduct a letter review of EPA's draft Well File Review #2 report (WFR2), in accordance with EPA's Peer Review Handbook. This report is expected to be ready for external review in December 2015.

None of the projects associated with the Hydraulic Fracturing Study is designated as “influential scientific information” (ISI). Publications resulting from EPA research projects will be considered together with scientific literature in the final assessment report. This report of results is designated a “highly influential scientific assessment” (HISA).

The Contractor should attempt to use the same experts who reviewed the draft Well File Review #1 report (WFR1) in January/February 2015. The Contractor shall attempt to balance the group of experts from state government, industry, nongovernmental organizations and academia. The panel should be comprised of approximately half state reviewers. All reviewers must meet the required technical qualifications and will be required to sign a non-disclosure agreement stating they agree to hold the peer review document and any supporting technical materials confidential (their eyes only).

The Contractor shall identify and select peer reviewers with the required expertise, determine absence of conflict of interest, establish schedules and submit the individual expert reports. The Contractor shall perform all activities under this work assignment in accordance with Agency Peer Review Policy procedures outlined in the following publication, Peer Review Handbook, 3rd Edition (EPA 100-B-06-002).

The deliverable from this peer review is the individual expert reports reflecting the independent scientific judgment of the reviewers in response to the charge questions to be developed by EPA for a thorough and meaningful assessment of the Agency’s work product. The peer review should provide input on the reasonableness of judgments made from the scientific evidence. The result should be an independent determination by each peer reviewer as to the appropriateness of (a) the assumptions made and hypotheses postulated, (b) the methodology utilized, (c) the quality and relevance of the data and information, (d) the accuracy of the analytic results, and (e) whether the conclusions reached are supported.

2.1 Identify Peer Reviewer Pool

The Contractor shall prepare and submit to the WACOR the credentials of technical experts who are qualified to independently peer review the report and supporting documentation according to EPA’s peer review guidelines from whom the contractor shall select and secure arrangements with approximately nine (9) to ten (10). The search and selection criteria should include the consideration of experience, demonstrated expertise and professional record as demonstrated by awards, publications, service to relevant professional societies and affiliations. The contractor shall not compensate or reimburse federal personnel. Provisions for compensation and reimbursement of Contractor-secured state personnel vary by state. The Contractor shall provide the WACOR with the curriculum vitae (CVs) of all experts.

Prior to the contractor entering into formal agreements with any of the experts, the proposed list of experts, including CV, summary biographical information supporting his/her expertise, certification of absence of conflict of interest and other supporting information, for each expert, shall be provided to the WACOR for review to ensure adherence to the technical requirements of the work assignment. The EPA will review and approve the potential pool of peer reviewers

based on their credentials and expertise to fulfill the role of peer reviewers of EPA technical documents. The EPA may reject the use of a particular candidate based on qualifications, conflicts of interest, or past direct involvement with the work under review. In such cases, the Contractor shall find suitable replacements to augment the pool of potential peer reviewers. The EPA shall review and consent to the qualifications of the pool of peer reviewer candidates, but the ultimate selection of peer reviewers from the approved pool shall be the responsibility of the Contractor.

Areas of Expertise Required

It is important that the correct expertise be engaged in these reviews. The peer reviewers must have the background in areas of expertise to be identified by EPA and be considered a recognized expert in one of these scientific areas. EPA will likely need experts in the following areas: oil and gas production well design, construction and operation, petroleum engineering, statistics, hydrogeology, drilling engineering, completions engineering, and logging engineering.

2.2 Select Peer Reviewers

Following the WACOR's review of the peer reviewer pool, the Contractor shall select 9-10 peer reviewers from the pool of potential peer reviewers reviewed by the WACOR, and initiate the peer review effort. The Contractor shall send electronic letters of invitation to each reviewer. The emails shall also include review materials designated by the WACOR, the charge to participants, and schedule for the review. Copies of all emails shall be copied to the Contract-Level COR (CL-COR) and the WACOR. The Contractor also shall provide to the peer reviewers any supplemental information requested by the reviewers and deemed necessary by the WACOR to complete a thorough review.

2.3 Coordinate Peer Review

The Contractor shall coordinate with the peer reviewers and monitor peer reviewers' progress to complete the review within the required time and LOE constraints described in this work assignment. Peer reviewers shall conduct their review according to the guidelines detailed in the charge to peer reviewers. Peer reviewers shall respond to the specific questions asked in the charge. The peer review must be completed within **15 business days** after the peer reviewers have received the documents. It is not necessary that the peer reviewers jointly reach consensus on their findings and recommendations. It is expected that no single peer reviewer would expend more than 16-20 hours performing the review, depending upon the complexity of the document; expending less than 16-20 hours is acceptable.

Charge questions for the peer reviewers will be provided by EPA.

2.4 Report Preparation

Individual expert reviewer reports shall be submitted to the Contractor within 15 business days after receipt of the documents. An electronic copy of the final expert reviewer individual reports (in MS Word format) shall be delivered to the WACOR as soon as they are available (1-2 business days). The contractor shall be responsible for paying the paid reviewers fees (except Federal personnel) as appropriate.

Deliverable 2.1 - Identify peer reviewer pool: The Contractor shall attempt to use the same experts who reviewed the WFR1 review in January/February 2015. The contractor shall submit a list and credentials for potential peer reviewers (include for each expert CV, summary biographical information supporting his/her expertise, certification of absence of conflict of interest) within one week after Contractor receipt of the report and any supporting documents.

Deliverable 2.2 - Select peer reviewers: The Contractor shall select and secure arrangements with approximately 9-10 experts who will provide the external review within one week after EPA review of the peer review pool.

Deliverable 2.3 - Coordinate peer review: The peer review should commence as soon as possible after arrangements with reviewers are in place. Contractor delivers materials, charge questions and timeline to experts for review upon receipt from EPA. The Contractor shall complete the peer review within 15 business days after the peer reviewers have received the documents.

Deliverable 2.4 - Report preparation: Final expert reviewer individual reports shall be delivered to the WACOR (electronic copy in MS Word format) as soon as they are available (within 1-2 business days).

TASK 3 – GENERAL TECHNICAL SUPPORT

Using information provided by the WACOR, along with information gathered or developed by the Contractor, the Contractor shall assemble information related to hydraulic fracturing as specified by the WACOR through written technical direction. The tasks may include work such as preparing 508-compliant pdfs of reports and QAPPs, presentations, or preparing materials to support EPA’s state engagement and broader stakeholder outreach activities. For purposes of preparing a work plan, the contractor shall assume there will be approximately ten (10) documents to make 508-compliant pdfs.

Quality Assurance and Quality Control

Any technical direction that involves the collection and/or analysis of environmental data will be carried out in accordance with ERG’s existing EPA-approved Quality Assurance Project Plan (QAPP).

Deliverable 4.1 - Assignment due within 5 business days of receiving written technical direction or as stated in the technical direction.

CONFLICT OF INTEREST

The Contractor shall follow Conflict of Interest procedures for Task Orders in accordance with Contract Clauses: Ordering Procedures, Organizational Conflicts of Interest (EPAAR 1552.209-71), Notification of Conflicts of Interest Regarding Personnel (EPAAR 1552.209-73), and “Conflict of Interest Evaluation for Task Orders.”

SPECIAL CONDITIONS/ASSUMPTIONS

Disclosure of information used in Conflict of Interest evaluation

The financial and professional information obtained by the contractor as part of the evaluation to determine existence of actual or potential conflict of interest is considered private and should not be disclosed to EPA or outside entities except as required by law or requested as part of a formal investigation by the EPA Office of Inspector General, General Accountability Office, or Congressional Committee.

Notice regarding guidance provided under this task order

Guidance is strictly limited to technical and analytical support. The Contractor shall not engage in activities of an inherent governmental nature such as the following:

1. Formulation of Agency Policy
2. Selection of Agency priorities
3. Development of Agency regulations

Should the Contractor receive any instruction from an EPA staff person that the Contractor ascertains to fall into any of these categories or goes beyond the scope of the contract or Task Order, the Contractor shall immediately contact the CL-COR or WACOR.

Management Controls

Frequent phone calls and/or meetings between the WACOR and contractor work assignment managers are required to discuss any questions that may arise during performance or completion of this work assignment. The contractor shall document these meetings and submit copies of this correspondence to the WACOR.

Per the technical direction clause EPAAR 1552.237-71 of the contract, the CL-COR and the WACOR are the only representatives of the CO authorized to provide technical direction. Per the technical direction clause, the CO and CL-COR will be provided with copies of all technical direction.

Travel

No travel is anticipated. All contractor travel must be approved by the CL-COR in advance.

Confidential Business Information

At this time, EPA anticipates that only non-CBI products will go out for an external letter peer review.

Meetings

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties.

Limitation of Contractor Activities

The contractor will submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor will incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the CO, CL-COR and WACOR.

Quality Assurance and Quality Control

The contractor will also provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, and corrective actions taken. If desired, the contractor may include this as a part of the contract required monthly financial/technical progress report.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 3-44				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2016			Title of Work Assignment/SF Site Name				
			Base Option Period Number 3			Hydraulic Fracturing Study				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW 3.0 and 4.0					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval					Period of Performance From 09/26/2015 To 09/25/2016					
Comments:										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO <input type="checkbox"/> (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee: \$0.00				LOE: 0				
09/26/2012 To 09/25/2016										
This Action:		\$55,497.00				594				
Total:		\$55,497.00				594				
Work Plan / Cost Estimate Approvals										
Contractor WP Dated: 10/15/2015		Cost/Fee: \$55,497.00				LOE: 594				
Cumulative Approved:		Cost/Fee: \$55,497.00				LOE: 594				
Work Assignment Manager Name Lisa Matthews						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number 202-564-6669				
						FAX Number:				
Project Officer Name Meghan Hessenauer						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number: 202-566-1040				
						FAX Number:				
Other Agency Official Name						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number:				
						FAX Number:				
Contracting Official Name Brad Heath						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number: 513-487-2352				
						FAX Number:				